

TITLE: UMBRELLA FRAME

FIELD OF THE INVENTION

The present invention relates to an umbrella frame, and more particularly to an umbrella frame which has a plurality of stretching frames to be used for a long period of usage without easily breaking.

BACKGROUND OF THE INVENTION

A conventional umbrella frame is made of metals. A joint which is disposed between a long rib and a short rib is easily broken after a long period of usage.

SUMMARY OF THE INVENTION

10 An object of the present invention is to provide an umbrella frame which has a plurality of stretching frames to be used for a long period of usage without easily breaking. Therefore, a period of usage is elongated.

Accordingly, an umbrella frame comprises a lower runner, a main shaft inserted through the lower runner, an upper runner disposed on a top end of the main shaft, and a plurality of stretching frames. Each of the stretching frames has a stretcher, a connection plate, an elastic rod, a connector, a distal rod, a long rib, and a short rib. The stretcher is connected to the lower runner. The short rib is connected to the upper runner. The stretcher has a distal protrusion and a downward lobe having a round hole. The connection plate has a first end protrusion and a second end protrusion. The connector has an end notch, an end hole to receive the distal rod, and a lower protruded block having a circular hole. The long rib has an end protruded block inserted in the circular hole pivotally, an upper pressing bar, an inner protruded bar having a first through aperture, and an outer protruded bar having a second through aperture. The elastic rod is inserted through a spacing defined by the upper pressing bar and the long rib. The short rib has a distal protruded block, an upper protruded bar having a round aperture, and

a lower lobe having a circular aperture. The elastic rod has two end hooks. The elastic rod is hooked in the end notch of the connector and the round aperture of the upper protruded bar. The distal protruded block is inserted in the first through aperture of the inner protruded bar pivotally. The second end protrusion is inserted in the second through aperture of the outer protruded bar pivotally. The first end protrusion is inserted in the round hole of the downward lobe pivotally. The distal protrusion is inserted in the circular aperture of the lower lobe pivotally.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG.1 is a perspective exploded view of a stretching frame of a preferred embodiment in accordance with the present invention;

FIG.2 is a perspective assembly view of a stretching frame of a preferred embodiment in accordance with the present invention;

FIG.3 is a schematic view illustrating a first operation of an umbrella frame of a preferred embodiment in accordance with the present invention;

FIG.4 is a schematic view illustrating a second operation of an umbrella frame of a preferred embodiment in accordance with the present invention; and

FIG.5 is an elevational view of an umbrella frame of a preferred embodiment in accordance with the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIGS. 1 to 5, an umbrella frame 1 comprises a lower runner 28, a main shaft 30 inserted through the lower runner 28, an upper runner 29 disposed on a top end of the main shaft 30, and a plurality of stretching frames 2.

Each of the stretching frames 2 has a stretcher 23, a connection plate 24, an elastic rod 25, a connector 26, a distal rod 27, a long rib 21, and a short rib 22.

The stretcher 23 is connected to the lower runner 28.

The short rib 22 is connected to the upper runner 29.

The stretcher 23 has a distal protrusion 231 and a downward lobe 232 having a round hole 2321.

5 The connection plate 24 has a first end protrusion 241 and a second end protrusion 242.

The connector 26 has an end notch 261, an end hole 263 to receive the distal rod 27, and a lower protruded block 262 having a circular hole 2621.

10 The long rib 21 has an end protruded block 213 inserted in the circular hole 2621 pivotally, an upper pressing bar 214, an inner protruded bar 211 having a first through aperture 2111, and an outer protruded bar 212 having a second through aperture 2121.

The elastic rod 25 is inserted through a spacing defined by the upper pressing bar 214 and the long rib 21.

15 The short rib 22 has a distal protruded block 221, an upper protruded bar 222 having a round aperture 2221, and a lower lobe 223 having a circular aperture 2231.

The elastic rod 25 has two end hooks 251. The elastic rod 25 is hooked in the end notch 261 of the connector 26 and the round aperture 2221 of the upper protruded bar 222.

20 The distal protruded block 221 is inserted in the first through aperture 2111 of the inner protruded bar 211 pivotally.

The second end protrusion 242 is inserted in the second through aperture 2121 of the outer protruded bar 212 pivotally.

The first end protrusion 241 is inserted in the round hole 2321 of the downward lobe 232 pivotally.

25 The distal protrusion 231 is inserted in the circular aperture 2231 of the lower

lobe 223 pivotally.

The elastic rod 25 is made of a metal.

The stretcher 23, the connection plate 24, the connector 26, the distal rod 27, the long rib 21 and the short rib 22 are made of plastics.

5 When the lower runner 28 is moved downward, the stretcher 23 will be rotated downward. Then the elastic rod 25 will force the distal rod 27, the long rib 21 and the short rib 22 to be folded in an N shape.

 The present invention is not limited to the above embodiment but various modification thereof may be made. Furthermore, various changes in form and
10 detail may be made without departing from the scope of the present invention.

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